

REMARKS

INTRODUCTION

In accordance with the foregoing, the abstract and claims 1 and 3-6 have been amended. Claim 2 has been cancelled. Claims 7-9 have been added. Claims 1 and 3-9 are pending and under consideration.

AMENDMENT TO THE ABSTRACT

The abstract was amended to improve the form of the abstract. No new matter has been added.

CLAIM REJECTIONS – 112

Claims 2 and 3 were rejected under 35 USC 112, second paragraph, as being indefinite. Claim 2 has been cancelled. However, the subject matter of claim 2 was added to claim 1 and appropriate correction was made to remove the word “type.”

Withdrawal of the foregoing rejection is requested.

CLAIM REJECTIONS – 102 and 103

Claim 1 was rejected under 35 USC 102(b) as being anticipated by Takemura et al. (US 6,332,714) (hereinafter “Takemura”).

Claims 1-3 and 5-6 were rejected under 35 USC 103(a) as being unpatentable over Sugiyama et al. (US 5,848,846) (hereinafter “Sugiyama”) in view of Takemura.

Claims 1 and 4 were rejected under 35 USC 103(a) as being unpatentable over Fujioka et al. (FR 2,836,965) (hereinafter “Fujioka”) in view of Takemura.

Claims 1-6

Amended claim 1 recites: “...wherein the raceway member is an outer race having its opposite ends formed with annular collars, a raceway surface of the outer race and an inner surface of one of the annular collars are subjected to induction hardening and tempering, an inner surface of the other annular collar is left as a raw material so as to be formed by bending.” Support for this amendment may be found in at least original claim 2 and further in the specification at page 7, line 18 through page 8, line 18. Claim 1 has further been amended to improve the form of the claim, and no new matter has been added.

These technical features of claim 1 was rejected as obvious over Sugiyama in view of Takemura. Specifically, Sugiyama was relied on to discuss that the raceway member is a shell outer race having its opposite ends formed with annular collars, which is discussed in Sugiyama at 3:58-3:60 and shown in Figure 1 with reference to the outer ring 1 and flange portion 1a.

However, as noted in the Office Action, Sugiyama does not discuss that outer ring 1 and flange portion 1a are subject to induction hardening and tempering. Instead, the Office Action relies on Takemura to show this feature of claim 1.

Although Takemura does discuss induction hardening, Takemura only discusses induction hardening of the raceway surface of the raceway track member and does not discuss that the annular collars are subjected to induction hardening and tempering, which is recited in claim 1. Referring to Figure 5 of Takemura, which shows a hub unit bearing, the flange is not subject to induction hardening.

Still further, Takemura does not discuss the technical feature of claim 1 where an inner surface of the other annular collar is left as a raw material so as to be formed by bending. This technical feature of claim 1 provides that annealing is not needed, with the result that one of the manufacturing steps can advantageously be eliminated. The work of bending the end portion to form the collar can be performed while that end portion has a hardness of not higher than HV 300 that is possessed by the raw material used for the outer race and, therefore, as compared with an annealed end portion of the conventional outer race (with the hardness being about HV 500), it can easily be accomplished.

Furthermore, it is respectfully submitted that the proposed combination of Sugiyama and Takemura to obviate the present invention is improper for several reasons.

One reason the combination of Sugiyama and Takemura is believed to be improper is because it is well settled that when the Examiner proposes a combination that makes a prior art reference inoperable for its intended purpose, the resulting inoperable prior art reference may be considered to teach away from the proposed combination and support a showing of nonobviousness. See *McGinley v. Franklin Sports Inc.*, 262 F.3d 1339, 60 USPQ2d 1001 (Fed. Cir. 2001). In the present case, in Sugiyama, after the completion of the parts assembly of the needle roller bearing, the needle roller bearing assembly is subject to heat treatments starting with carbonitriding followed by hardening and tempering in sequential order to finalize the shell type needle roller bearing as a product on sale. See Sugiyama, 4:8-4:13. Accordingly, in Sugiyama all three of the shell type outer ring 1, flange 1a and other end 1b are subject to heat treatment. If all three of the shell type outer ring 1, flange 1a and other end 1b were subject to

induction hardening and tempering as discussed in Takemura, an inoperable device or method would be the result. Specifically, the method of Sugiyama requires that the shell type needle roller be assembled before hardening whereas the induction hardening of Takemura takes place on the guide rail 10 only along the ball groove 11 to fabrication. If other end 1b of Sugiyama was subject to induction hardening, it would not be possible to effectively bend it into position to assemble the bearing.

Another reason that it is believed that the combination of Sugiyama and Takemura is improper is because it is well settled that a motivation to combine requires desirability, not merely trade-off. See Winner International Royalty Corp. v. Wang, 202 F.3d 1340, 53 USPQ2d 1580 (Fed. Cir. 2000). In the present case, the method of Sugiyama relates to performing a carbonitriding treatment and hardening and tempering treatments to an assembled needle roller bearing and goes into great detail as to why this is an effective method of producing the needle roller bearing. Accordingly, it is respectfully submitted that there is no motivation to substitute the induction-hardening of Takemura when Sugiyama already discusses hardening.

It is further respectfully submitted that Fujioka also does not show the above noted features of claim 1. For at least the foregoing reasons, it is respectfully submitted that claim 1 patentably distinguishes over the relied upon references. Claim 2 has been cancelled. Claim 4 has been rewritten in independent form. Claims 3, 5 and 6 depend on claim 1 and are therefore believed to be allowable for at least the foregoing reasons. Claims 3, 5 and 6 have been amended to improve the form of the claims, no new matter has been added.

Regarding claim 4, support for the amendments to claim 4 may be found on at least page 13, line 27 through page 14, line 7 of the specification. It is further respectfully submitted that claim 4 is allowable for at least the same reasons as claim 1 is believed to be allowable.

Withdrawal of the foregoing rejections is requested.

NEW CLAIMS

New claims 7-9 have been added to present additional features of the present invention. Support for these new claims may be found in at least claims 3, 5 and 6, respectively. Entry and consideration are respectfully requested.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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